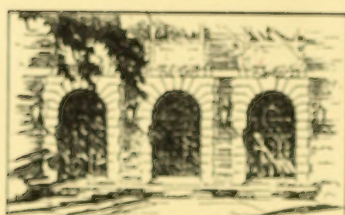


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PUBLICATION 194.

REPORT SERIES.

VOL. V, No. 2.

ANNUAL REPORT OF THE DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1916.



CHICAGO, U. S. A.

January, 1917.

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THE LATE SETH E. MEEK

Assistant Curator of Zoölogy from July 24, 1897 to July 6, 1914, the date of his death.

FIELD MUSEUM OF NATURAL HISTORY.

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THE LIBRARY OF THE
FIELD MUSEUM
UNIVERSITY OF ILLINOIS

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CARL L. HUBBS, *Assistant Curator Division of Ichthyology and
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THE N. W. HARRIS PUBLIC SCHOOL EXTENSION.

S. C. SIMMS, *Curator.*

RECORDER.

D. C. DAVIES.

ASSISTANT RECORDER.

BENJ. BRIDGE

THE LIBRARY.

ELSIE LIPPINCOTT, *Librarian.*

EMILY M. WILCOXSON, *Assistant Librarian.*

January 1, 1917.

ANNUAL REPORT OF THE DIRECTOR.

1916

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1916.

The year has been profitable in accessions of material notwithstanding there have been no expeditions or field work except of a local and unimportant character. More or less confusion is observable throughout the Museum by reason of the prosecution of the large work of installing new material and re-installing old material and selecting material from storage for display, all occasioned by the labor constantly going on in preparation for the exhibition halls of the new Museum building. In fact, the justifiable pride taken in the orderly, systematic and classified arrangement of the public courts and halls of the Museum is rapidly disappearing in the face of the over-crowded condition and shifting about of cases in preparation necessary to the consummation of the ambitious plans of the occupation of the new Grant Park structure.

Mr. George F. Porter, Trustee, has resigned his place upon the Board because of his intended protracted absence from the city. The vacancy has been filled by the election of Mr. Henry Field, second grandson of Mr. Marshall Field, the founder of the Institution.

There have been no retirements from the scientific staff during the year. Dr. J. Alden Mason, of the University of California, has accepted the position of Assistant Curator in Mexican and South American Archæology, and has entered upon his duties. An appointment to the Assistant Curatorship of the Division of North American Ethnology, authorized by the Board of Trustees, has not been decided upon. Mr. Carl L. Hubbs, of the Leland Stanford Junior University, has accepted the position of Assistant Curator of Ichthyology and Herpetology and will commence his duties early in 1917. Both of these appointments are from the younger school of their respective sciences, but come to the Museum with the very highest endorsement and with the promise of a useful career in the Institution.

Mr. Stanley Field having assumed the cost of restoring and maintaining the activity of the Section of Plant Reproduction in the Depart-

ment of Botany, discontinued three years ago, the Museum has been so fortunate as to again secure the services of Dr. B. E. Dahlgren as an Assistant Curator in charge of this work, which he will resume with competent assistants within the next month. Work on the shops and studios required for this section has already commenced.

The death of Mr. Norman Wait Harris, founder of the N. W. Harris Public School Extension of Field Museum, must be announced. The Board of Trustees at a meeting held August 14th unanimously adopted the following:

"The death of Norman Wait Harris has closed a life whose success and whose deeds were based upon and actuated by steadfast Christian principles and an unswerving faith in human character. His wealth was amassed by investments in public and private obligations undertaken for the development and betterment of civic conditions and public education.

"No man of business in these or other times has been more scrupulous in his methods, more honorable in his dealings, or more just in measuring the rights and privileges of individuals or communities. All his manifold transactions, his endowments and gifts to religious, benevolent and educational causes, exemplify a purpose to dedicate these benefactions so as to uplift humanity, and push it forward not alone for its material good but for its spiritual welfare.

"He was a philosopher in philanthropy as he was in finance. The honor and respect so generally shown him in life will be accorded his name by all classes for generations.

"In expressing this appreciation of the life and character of Mr. Harris, the Board of Trustees of Field Museum of Natural History, which Institution has been the grateful object of his wise and humane generosity, desire especially to record their conviction that in no direction in which Mr. Harris has selected a means of manifesting his interest in men and their children, will larger, deeper or more lasting good have been done than by the endowment of The N. W. Harris Public School Extension of Field Museum of Natural History.

"The Board of Trustees of Field Museum of Natural History, having unanimously adopted the foregoing, do instruct that the same be spread upon the records of the Board and request the President to cause the same to be properly engrossed and attested and presented to the family of the late Norman Wait Harris.

The progress of the Harris Extension to the Public Schools is referred to in another part of this report, but the impressive fact that over 150,000 public school children are now included in the service of this Extension is a matter for special mention.

Mr. Stanley Field, President of the Museum, has during the year provided the funds for the establishment of a Pension System in behalf of the employes of the Museum whose compensation is not above a

certain annual sum. This act, affording such striking evidence of Mr. Field's interest in the work of the Museum and sympathy for those who are performing it, has brought to the employes a comforting assurance of the future, which not only spreads contentment and relief throughout the Institution, but must add to the efficiency of the work of its beneficiaries.

The assumption by Mr. Edward E. Ayer of the cost of supplying to the Ayer Ornithological Library any desirable publications not now contained in the library, or which may hereafter be published, was announced during the year — a provision for the future of this important section of the Museum Library which can hardly be over-estimated.

Another gift from the membership of the Board of Trustees is that of Mr. Arthur B. Jones, who assumes the cost of securing and installing a group of six North American buffalo with landscape painting and accessories. This gift which enables the Museum to present in the best form known to the art of modern taxidermy this familiar but practically extinct and exclusively North American mammal in different ages and sex, is a most highly valued contribution to the exhibition halls of the Department of Zoölogy.

During the year the material procured at the San Francisco Exposition has arrived at the Museum and altogether constitutes a very valuable acquisition to all the departments of the Museum. The Chinese pagodas are now installed in eleven cases. The Chinese gateway has been erected in the main dome court, while the minerals and birds and models and other items, all most desirable, have been cared for in the proper departments.

At a meeting of the Board of Trustees held December 11th, by unanimous vote permission was asked of Mr. Stanley Field to name one of the exhibition halls of the new Museum building in his honor, requesting him to select a hall. Mr. Field has since announced his preference for the Hall of Mammals.

A most noteworthy gift to the Museum during the past year has been the private herbarium of the late Elihu Hall, consisting of approximately 35,000 specimens, presented by the heirs of Mr. Hall. This extends the plant collection in the Museum to most gratifying proportions and adds much new material of unusual interest and worth.

Dr. Frank W. Gunsaulus has presented the Museum with his remarkable collection of Japanese sword guards, a collection which has attracted much interest and comment while being on exhibition at the Chicago University. Accompanying this most unique and almost priceless collection, were a number of rare and costly volumes of Japanese

Art. The Board of Trustees elected Mr. Gunsaulus a Patron in recognition of the eminent services he has rendered the Institution.

Mr. Homer E. Sargent was also elected a Patron for similar reasons.

Mr. Marshall Field has presented the Board of Trustees of the Museum with an oil portrait of the Founder of the Museum, painted by Bonnat. It is to be placed on the wall in the Trustees' Room of the new Museum.

As a result of the personal efforts of President Stanley Field, the Board of Trustees has had the pleasure of electing fifty-two Life Members during the past few months. This is a most remarkable manifestation of the growing interest of the citizens of Chicago in the Institution, which far outweighs in importance even the very considerable sum of money thus added to the resources of the Museum.

The contract for the filling in of the large area of ground, whose natural elevation was some thirty feet below the floor of the basement of the new Museum building, is practically finished; in fact, would have been accomplished except for weather conditions. This completes what might be called the foundation work of the building and it is expected that the placing of the steel and the setting of the marble will begin as early in the spring as the prevailing temperature will permit. The main water line has been finished to the building. The big sewer duct has also been laid to the building line. The marble is cut and three-fourths of it is stored in the city, the balance being at the quarries subject to requisition. The structural steel has all been delivered to the site.

MAINTENANCE.—The budget authorized by the Board of Trustees provided the sum of \$156,796 for the maintenance of the Museum for the year ending December 31, 1916. The amount expended was \$156,280, showing a balance in excess of the estimated expenses of \$20,516. In addition to this amount approximately \$11,000 was expended by authority of the Board of Trustees for collections, expeditions, etc., bringing the total expenditure for the year to \$147,280.

PUBLICATIONS.—During the year five publications and two indexes have been issued. These publications comprise five volumes, details of which follow:

Pub. 186.—Report Series. Vol. V, No. 1. Annual report of the Director to the Board of Trustees for the year 1915. 74 pages. 14 half-tones. Edition 2500.

Pub. 187.—Botanical Series. Vol. II, No. 11. 1. Contributions to North American Euphorbiaceae VI-11. Vegetation of Alacran Reef. By C. F. Millspaugh. 32 pages. 2 half-tones. Edition 1500.

- Pub. 188.—Geological Series. Vol. III, No. 10. Catalogue of the Collection of Meteorites. By O. C. Farrington. 82 pages. 4 half-tones. Edition 1500.
- Pub. 189.—Zoölogical Series. Vol. X, No. 14. Mammals of the Collins-Day South American Expedition. By W. H. Osgood. 18 pages. 2 half-tones. Edition 1500.
- Pub. 190.—Ornithological Series. Vol. I, No. 10. Descriptions of apparently new South American Birds, with notes on some Little Known Species. By C. B. Cory. 10 pages. Edition 1500.

These publications have been distributed to all names on the mailing list both in domestic and foreign countries with the exception of those foreign countries where service has been temporarily discontinued by the Bureau of International Exchanges. If a prompt acknowledgment of these publications may be taken as an evidence of appreciation, it has been noted that practically all of the acknowledgment cards have been signed and returned. With the increasing number of publications issued and the increasing demand, especially for the earlier numbers, it has been found advisable to take an inventory of the stock actually on hand. An inventory of the half-tones has also been taken.

NAMES ON MAILING LIST

Domestic	599
Foreign	671
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	1,260

DISTRIBUTION OF FOREIGN EXCHANGES

Africa	20	Italy	37
Australia	31	Japan	10
Borneo	1	Java	4
Canada	26	Mexico	19
Central America	7	New Zealand	6
China	3	Norway	8
Denmark	8	Portugal	5
France	54	South America	30
Great Britain	107	Spain	7
Greece	1	Sweden	14
Holland	20	Switzerland	23
India	17	West Indies	8

DISTRIBUTION OF DOMESTIC EXCHANGES

Alabama	2	Delaware	2
Arkansas	1	District of Columbia	62
California	27	Florida	4
Colorado	10	Idaho	2
Connecticut	21	Illinois	65

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DISTRIBUTION OF DOMESTIC EXCHANGES

Indiana	16	North Dakota	2
Iowa	13	Ohio	20
Kansas	6	Oklahoma	3
Kentucky	3	Oregon	1
Louisiana	5	Pennsylvania	35
Maine	7	Rhode Island	4
Maryland	9	South Carolina	2
Massachusetts	64	South Dakota	2
Michigan	12	Tennessee	2
Minnesota	8	Texas	3
Mississippi	3	Utah	1
Missouri	14	Vermont	4
Montana	2	Virginia	4
Nebraska	6	Washington	7
Nevada	2	West Virginia	5
New Hampshire	2	Wisconsin	16
New Jersey	13	Wyoming	2
New Mexico	3	Cuba	3
New York	80	Hawaii	5
North Carolina	6	Philippine Islands	3
		Porto Rico	1

THE LIBRARY.—The accessions of the Library for the year are fourteen hundred books and pamphlets, bringing the total number in the library to 69,675, distributed as follows:

General Library	44,028
Department of Anthropology	3,436
Department of Botany	7,072
Department of Geology	9,868
Department of Zoölogy	4,371

The decrease in the number of accessions is largely due to the existing conditions abroad that continue to affect the receipts from contemporary institutions and societies. It is surprising that so many continue to send their publications as regularly as they have, as will be noted by the list of accessions. A most satisfactory feature of the year's work is the acknowledgment of the gifts from friends of the Museum, which include rare and out of print works of an unusually helpful and valuable nature. This is particularly true of the collection of Japanese works presented by Dr. Frank W. Gunsaulus that were indispensable in the installation of the Japanese material given to the Museum by Dr. Gunsaulus, and will be for all time valuable to the students of Japanese art. Among these works are: Audsley's *Ornamental Arts of Japan*; Bing's *Artistic Japan*; Dresser's *Japan*; Gonse's *L'Art Japonais*; Joly's *Sword Mounts* and Joly's *Sword Fittings*;

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Tomkinson's Japanese Collection; Jacoby's Japanische Schwertzieraten. Mr. Edward E. Ayer presented copies of Nelson's Birds of Yorkshire and Dixson's Game Birds. Mr. Ayer has also caused to be ordered for the Museum a collection of ornithological works, which when secured, will further enrich the Edward E. Ayer Ornithological Library. The students and artists, as they become acquainted with the resources of the Museum Library, find it the only library in the city containing so many rare and beautifully illustrated ornithological works. Mrs Edward E. Ayer presented a copy of her translation of the Memorial of Fray Alonso Benavides, 1630. The Cambridge University, England, sent a set of sixteen volumes of its Archæological and Ethnological publications. From the Instituto Biologico of Mexico was received eight of the earlier volumes of *La Naturaleza*. The Canadian Institute sent fifteen of its earliest publications. The Deutsche Morgenländische Gesellschaft, Leipzig, presented twenty-three volumes of its *Zeitschrift*. The Academy of Arts and Sciences, Boston, completed its file of Proceedings of fifty-one volumes to date, by sending volumes one to twenty-eight inclusive. Through the generosity of various governments represented at the Panama-Pacific International Exposition, the library received a hundred books and pamphlets. Among these contributions was that of the Chinese Commission consisting of a work in sixteen volumes, bound in cloth cases, entitled *K'in ting shu king t'u shuo*, issued by the command of the late Empress Dowager in 1903, and now out of print. The Argentine Commission gave twenty-eight volumes, among which is a set of the *Boletin* of the Cordoba Academy of Natural Sciences, particularly desirable. The purchases have been confined to a limited number of books required by the staff for immediate use. Of the twelve orders approved, eleven were filled and these added thirty-five works to the Departmental libraries. Through exchanges with foreign book dealers for publications issued by the Museum, thirteen other important volumes desired by the staff were obtained.

Year after year the periodical lists are examined by the Curators and those periodicals that were supposed to have permanent value when subscribed to but have become of less use to the staff, have been dropped from the list. At the present time ninety-eight periodicals are received with twenty continuations.

The increased cost of materials used in binderies is reflected in the advance in the schedule of prices for binding, leather binding being almost prohibitive. For several years, however, all books except a few sets in continuation have been bound in cloth or library buckram in preference to leather as more durable bindings. During the year six hundred and thirteen books and pamphlets have been bound.

The activities which have to do with the receiving, checking, recording, cataloguing, classifying, labeling, counting, and binding — the process through which a book must pass before it may be properly placed on the shelf — has continued as in past years. The smaller number of accessions has permitted a continuance of the analytical work that further enhances the value of the library. There have been newly written, revised, and rewritten 20,560 cards.

DEPARTMENTAL CATALOGUING, INVENTORING, AND LABELING.—The work of cataloguing in the Department of Anthropology has been continued as usual during the current year, the number of catalogue cards written by the various members of the staff totaling 2,036. These cards are distributed among the divisions as follows: North American Ethnology and Archaeology 178; South American and Mexican Ethnology and Archaeology 169; Melanesian Ethnology 109; Philippine and African Ethnology 130; Gunsaulus collection of Japanese sword-guards 926; Tibetan Ethnology 242; Chinese Archaeology and Ethnology 181; Indian Archaeology 2. These cards have been entered in the inventory books of the Department, which now number 38. The annual accessions amount to 19, all of which have been entered. The total number of cards entered beginning from the first volume is 141,552. The Section of Printing has supplied 4,533 labels to the Department during the year. These are distributed over the divisions as follows: American Archaeology 235; Chinese Archaeology 277; African Ethnology 2,167; Melanesian Ethnology 1,854. The Section of Photography has provided the Department with 232 negatives, 146 prints and 18 lantern slides. The prints were duly classified and added to the departmental albums. An additional number of 436 cards were prepared for the catalogue of lantern slides, the inauguration of which was reported last year. To the label file were added 875 new label cards.

All prepared and organized material received by the Department of Botany during the year has been catalogued to date. 20,292 entries have been made, making the total number of entries 451,081. Of the Hall herbarium 14,140 specimens have been prepared, mounted, and catalogued for insertion in the general herbarium of the Museum.

The cataloguing in the Department of Geology has kept pace with accessions and all specimens in the department are fully recorded. The largest number of entries made was of economic specimens, a total of 1,302 new entries having been made in this division. These with additional entries give a total number for the year of 1,989, and a total number for the department of 134,708. The number of cards written during the year was 78. The labels written number 1,047. About

200 of these labels were handwritten with white ink on black cardboard to serve as temporary labels until printed ones could be secured; the remainder were from the Section of Printing. Most of the labels were for newly installed economic specimens. A total of 722 printed labels has been received during the year, the larger part being for the meteorite collection. These have all been installed with the corresponding specimens. There remains in the hands of the printer, copy for 1,143 labels.

In the Department of Zoölogy the cataloguing and labeling of the South American birds received from Museum expeditions has been continued during the year. A regional catalogue of South American mammals was prepared in the form of an index of about 650 cards. A total of 1,105 labels were installed as follows: 36 labels for mounted fishes; 2 for the Moose group; 2 for the osteological exhibit; 1 for South American bird group; 55 for mounted birds and 1,009 for the shell collection. The entries made during the year number 1,817, of which 1,663 were for ornithology and 154 for mammalogy.

The following table shows the work performed on catalogues and the inventorying accomplished:

	No. of Record Books	Total No. of entries to Dec. 31, 1916	Entries During 1916	Total No. of Cards Written
Department of Anthropology	38	143,338	2,036	141,552
Department of Botany	57	453,083	20,292	70,750
Department of Geology	22	134,593	1,989	7,783
Department of Zoölogy	40	98,647	1,817	33,968
The Library	14	102,830	2,540	225,527
Section of Photography	20	114,455	1,152	.....

ACCESSIONS.—In the Department of Anthropology the most remarkable purchase of the year is represented by the acquisition made at the Panama-Pacific International Exposition, consisting of a Chinese honorary gateway and eighty-four models of Chinese pagodas. This material was turned out by the Industrial School maintained by the Jesuit Establishment Sikkawei near Shanghai. The gateway is entirely carved of teakwood, and in its monumental character presents a fine example of Chinese architecture, and thus far is the first monument of this art in the Museum that is constructed on the size of an original. The magnitude of the composition, the harmony of proportions, the high technical skill, the numerous artistic and beautiful carvings, the wealth of ingenious decorative designs which embody a fine record of Chinese thought, make this object a most striking and prominent acquisition. The collection of eighty-four models of Chinese pagodas has both a highly scientific and an educational value. The pagodas are

the most conspicuous religious buildings of China, veritable landmarks with a detailed recorded history. This collection presents the very first comprehensive attempt to introduce them into a museum and to render their study generally accessible. The models being reproduced according to a rigid scale (about $\frac{1}{50}$ of the originals, on an average), convey an exact idea of the original monuments and allow a minute study, even of details of construction. All provinces of China are represented in the collection; besides, there are two pagodas from Korea and two from Tibet. A prominent accession by purchase is a collection of more than eight hundred Mexican archaeological objects. The majority of antiquities in this collection are from excavations on the outskirts of San Miguel Amantla, Azcapotzalco. Among the hundred pieces of pottery forming a part of this collection are many rare and unique forms. There are also about two hundred small objects of great excellence and artistic quality, comprising Mixtec stone figurines, mirrors of obsidian and pyrite nodules, beads and pendants of various forms carved from jadeite, agate, and other translucent stones. Another acquisition made by purchase consists of seven choice Navaho blankets, in good condition, collected about forty years ago at Fort Wingate, New Mexico, by Lieut. Col. Wilson T. Harts of the U. S. Army. The most notable gift received during the year is the collection of Japanese sword-guards and sword-furniture brought together by the efforts of Dr. Frank W. Gunsaulus. This important collection consists of over nine hundred specimens, comprising all the manifold designs ever conceived for the decoration of sword-guards, and covering all periods from mediæval to modern times. These appurtenances of the sword represent a splendid object-lesson in the application of Japanese design, and eloquently reveal the innate spirit of Japanese chivalry and gallantry. The gift of Dr. Gunsaulus is accompanied by a valuable collection of books relating to Japanese art and in particular to sword-guards, as well as by a special catalogue in manuscript, prepared by Miss Helen Gunsaulus with great care after many years of earnest study of the subject. Also 1,703 negatives of the sword-guards (the obverse and reverse of each having been taken) were presented by Dr. Gunsaulus. Eight musical instruments made in Peking were presented by the Commission of the Republic of China at the Panama-Pacific International Exposition. To Mr. Luther Parker, a former government official in the Philippines, the Department is indebted for a small, but very interesting collection of ancient pottery fragments and other material, found by him in burial caves on the Islands. This pottery comes from the khna of Sawankhalok in Siam and from those of southern China, and testifies to the mediæval intercourse of the Islands

with the mainland of south-eastern Asia. Of special interest is a fragment of Celadon pottery of Chinese origin, the body of which exhibits a pure white porcelain mass, while as a rule the early Celadon glaze is wrought over a crude stoneware body. Mr. Arthur B. Jones enabled the Museum to acquire a silver statuette made in Lhasa, Tibet, and inlaid with pearls, turquois, and coral; it represents Amitabha, the Buddha of Light. Two fine old Navaho blankets, one of bayeta, are gifts from Mr. Homer E. Sargent. Mr. Sargent also provided funds for the purchase of a collection of ancient pottery from Casas Grandes, Mexico. It consists of 162 small pieces comprising coiled and indented, smooth, undecorated, polished red and black, as well as the beautiful polychrome ware characteristic of that region. It is equally of scientific and artistic value. Mr. Sargent also presented to the Museum twenty beautiful old head-plumes worn by the Karok Indians of northwestern California in the White Deer-Skin Dance. To Mr. Edward E. Ayer are due six fine old buckskin skirts, two aprons ornamented with pine-nuts, three excellent head-bands of buckskin, worn in the Jumping Dance, and a quiver of basketry carried during the same dance-ceremony, all from the Hupa, Yurok, and Karok Indians of northwestern California. Mr. Ayer also contributed thirty-eight prehistoric stone implements collected in the vicinity of Phoenix, Arizona. An interesting image carved from green quartz, of Mexican origin, was presented by Mrs. S. E. Barrett.

The number of accessions received by the Department of Botany during the year numbered 48, of these all the specimens of 44 have been prepared, organized, and catalogued. The accessions comprise 44 economic and 20,248 herbarium specimens. The most important addition to the plant collections is that of the private herbarium of Elihu Hall, presented by the family of the late Mr. Hall. This herbarium is estimated to contain about 35,000 sheets; it also comprises a great mass of duplicates that will be utilized in exchanges. The Hall herbarium embraces Mr. Hall's personal collections in Illinois, Texas, and Oregon, and Hall and Harbor's Rocky Mountain Plants; together with a mass of material acquired in exchange with his contemporaries: Curtiss, Bebb, Clinton Patterson, Bolander, Faxon, Gray, M. E. Jones, Mohr, Canby, Hale, Vasey, Blake, Bishop, Fendler, Eaton, Garber, Howell, Parry, Lemmon, Macowan, Oakes, Porter, Ravenel, Wolf, and many others in North America. From his foreign exchanges he secured a complete set of all the numbers of the *Relique Maillleanæ*, and very full series of Bourgeau, Spain; Dænen, Switzerland; Blanche, Syria; Laresche, Switzerland; Gaillardot, Syria; Cosson, France; Heldereich, Greece; Mathonnet, France; Bourgeau, Italy; Timothée, France; Pisa

Herbarium, Italy; Bordere, France; Bunge, China; Bourgeau, France; Müller, Australia; McOwan, South Africa; Holub, Africa, and many others. The Hall herbarium embraces the years 1845 to 1880. Its unique element consists in a large number of specimens gained by growing plants near his home, in the neighborhood of Athens, Illinois, from seeds gathered in the western and southwestern regions of the United States and others secured from fruiting herbarium specimens from all parts of the world; thus enabling investigators to compare original plants with those grown in a widely different environment. The other notable additions for the year are: Ames, Philippine orchids 258; Clements, California plants 371; Gaumer, Yucatan 311; Grant, Washington 76; Miss King, Kentucky 307; Lansing and Sherff, Illinois 92; Meyer, China 81; Miss Moodie, Alberta 308; New York Botanical Garden, West Indies 1,447; Miss Standley, Florida 335; U. S. National Herbarium, various regions 324; University of California, California 120; and Wenzel, Philippines 630. The additions to the organized herbarium during the year are regionally shown in the following table. These figures represent only those regions that have been augmented during the past year — not the herbarium as a whole:

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
ARCTIC REGION:		
Svalbard	3	8
ALASKA	3	1,151
Otoka Island	1	1
Unalakleet	1	30
CANADA		
Alberta	418	1,151
Nova Scotia	1	383
UNITED STATES:		
Alabama	1	1,540
Arizona	59	8,190
California	505	24,273
Santa Catalina Isl.	1	187
San Bonaficio Isl.	1	10
Colorado	6	9,258
Dakota, North	75	637
Dakota, South	4	1,306
District of Columbia	14	2,524
Florida (Isl. of Keys)	342	20,107
Idaho	2	3,650
Illinois	948	23,186
Indiana	36	6,237
Kentucky	307	1,368
Maryland	23	1,200
Michigan	72	3,431
Isle Royal	1	1



TYPE CASE. NORTH AMERICAN FORESTRY.

Method of installing timber specimens of the second class. In this installation the same ratio of size of trunk is maintained as in the timbers of the first class as seen in Plate II of this volume.

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LOCALITY	Added to Herbarium in 1916	Total in Herbarium
UNITED STATES:		
Montana	1	4,029
Nebraska	2	493
Nevada	7	1,270
New Hampshire	4	1,554
New Mexico	14	3,502
New York	20	6,457
Ohio	1	2,045
Oklahoma	2	296
Oregon	1,013	8,401
Pennsylvania	8	10,130
Rocky Mountains	946	2,322
Texas	1,290	9,607
Utah	5	2,548
Virginia	11	2,723
Washington	77	7,420
Wisconsin	32	4,931
Wyoming	3	1,569
Yellowstone	1	528
BERMUDA	8	669
WEST INDIES:		
Anagada	7	33
Bahamas:		
Mangrove Cay	1	7
New Providence	1	2,444
Barbados	3	353
Cayman Brac	3	98
Cuba	206	10,948
Isle of Pines	10	658
Dominica	13	90
Haiti	22	331
Jamaica	564	7,218
Martinique	1	618
Porto Rico	613	4,727
Culebra	1	212
St. Croix	1	1,280
Santo Domingo	5	1,322
St. Kitts	1	13
Tortola	1	33
CENTRAL AMERICA:		
Costa Rica	2	595
Guatemala	1	3,054
Honduras	1	272
Ruatán	2	23
Mexico	29	36,983
Lower California	2	1,682
Guadaloupe Isl.	1	42
Yucatan	1,088	5,970
Panama	21	103

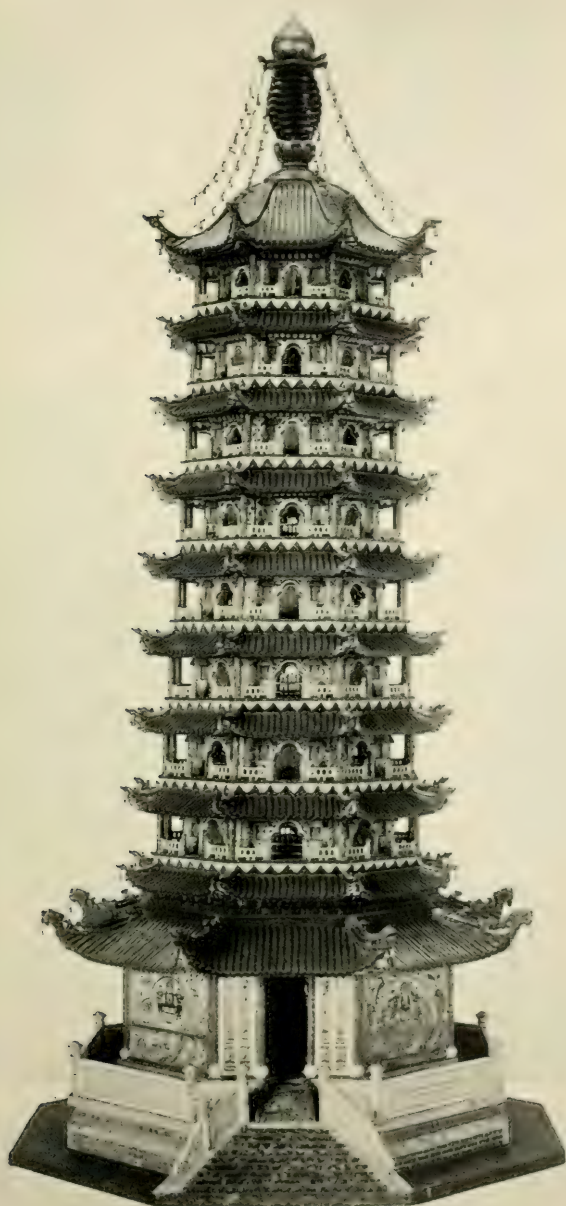
92 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
SOUTH AMERICA:		
Argentina	94	1,065
Bolivia	8	3,024
Brazil	1	596
Venezuela:		
Curacao	7	99
Ecuador	1	850
Trinidad	1	487
EUROPE (in general)	12	93
Austro-Hungary	504	7,773
Belgium	89	283
Denmark	10	381
France	4,152	8,337
Guernsey	1	1
Germany	367	8,655
Great Britain:		
Angle Isl.	1	1
England	117	2,462
Ireland	8	172
Scotland	35	544
Wales	4	83
Greece	172	696
Italy	955	3,503
Lapland	18	158
Macedonia	1	1
Mediterranean Islands:		
Corriva	13	67
Malta	1	6
Majorca	1	4
Norway	63	1,178
Portugal	11	31
Russia	29	1,626
Spain	278	632
Sweden	264	9,599
Switzerland	980	3,632
Turkey	3	20
AFRICA:		
Abyssinia	1	220
Algeria	424	564
Egypt	10	46
Morocco	1	7
South Africa	629	1,912
Canary Islands:		
Madeira	47	47
Madeira	83	103
Mauritius	9	21
Nubia	1	18
Tunis	72	79
ASIA:		
Arabia	1	28

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
ASIA:		
Asia Minor	45	104
China:		
Altai Mountains	291	291
Mongolia	4	6
Sungaria	45	45
India	24	1,062
Japan	1	297
Persia	28	44
Philippine Islands	895	8,912
Siberia	5	468
Syria	280	362
AUSTRALIA (general)	181	2,234
New South Wales	12	258
Queensland	4	25
South Australia	2	2
Tasmania	1	307
Victoria	4	430
West Australia	17	142
OCEANICA:		
Marquesas Islands:		
Muka Hiva	4	4
Sandwich Islands (general)	5	489
Oahu	2	495
Horticultural	65	2,736
Illustrations mounted as Herbarium sheets	109	2,052

In the Department of Geology a considerable number of valuable accessions were received from exhibitors at the Panama-Pacific International Exposition. The commissions or firms presenting important material were the Gas Light and Coke Company, London, England, Australian Commission, Bolivian Commission, New Zealand Commission, Chinese Commission, and Greek Commission. The Gas Light and Coke Company, London, England, presented 223 specimens illustrating the by-products of gas manufacture and a mahogany floor case for its exhibition. The series is very complete and well prepared, showing the various products obtained from the distillation of coal. The specimens include coal, coke, pitch, large masses of crystals of prussiate of potash, various dyes, various hydro-carbons, such as benzol, toluol and varieties of creosote, various forms of naphthaline, pyridine, anthracene, alizarin, ammoniacal liquids, sulphates, nitrates, muriates, carbonates, and other compounds of ammonia, sulphur, copperas, sodium and potassium cyanides, various blue coloring matters, other coloring matters, cyanogen, fluorescin, and various other products. The whole forms a very nearly complete series illustrating products

which may be obtained from coal. The Australian Commission presented 61 specimens illustrating many important ores of Australia. Many of the specimens are of large size, and the whole accession aggregated several hundred pounds in weight. An important feature was a full series of ores and concentrates of lead and zinc from the Broken Hill district. There are also gold ores, tin and copper ores from many localities, and a number of miscellaneous specimens. They are all of excellent quality and will add much to the representation of Australian ores in the Museum. The Bolivian Commission presented 80 specimens consisting chiefly of ores of tin from various mines of Bolivia. A large number of these specimens illustrate ores of remarkable richness. Although Bolivia is one of the world's most important sources of tin, the Museum had previously no representation of its tin ores, so that the accession is especially welcome. Ores of bismuth, molybdenum and copper were also included in the series received. Among the copper ores, some remarkable arborescent aggregates of native copper are of special interest. The Chinese Commission gave a series of ores numbering 291 specimens, chiefly from the Province of Honan, China. These include specimens of gold ore, sulphur, silver ore, asbestos, copper ore, stream tin, manganese ore, antimony ore, fluorite, coke, and coal. Specimens of lead, zinc, and iron made from these ores were also included. There were also a number of specimens of mineralogical interest, such as two specimens of crystallized cinnabar, a large one of calcite and a number of crystallized smoky quartzes. All of this material is entirely new to the collections, no specimens from this part of China having been previously possessed in the Department. The Commission also presented a model of a large lead mining, milling, and dressing works at Shui kao Shan, Province of Hunan, China. This model is about 13 feet square and represents on a scale of 1 to 135 the topography of the region where the lead mines are located and the various buildings, derricks, pits, and tracks by means of which the activities of the mines are carried on. The model has been prepared with care and accuracy and has geographic as well as economic interest. The Greek Commission presented 315 specimens of ores which represent all the important mineral products of Greece except the marbles. They include specimens of zinc, lead, silver, iron, manganese, nickel, copper and chrome ores together with specimens of emery and magnesite. There are also specimens of lead and base bullion made from the ores, and of emery powders, calcined magnesite, magnesite cement and magnesite fire brick. The specimens are of large size and well adapted for museum display. The large blocks of Greek emery are especially satisfactory, as the Museum has hitherto been unable to secure display



MODEL OF THE SO-CALLED PORCELAIN PAGODA OF NANKING.
Made by the Chinese Orphanage of Sikkawei near Shanghai.

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specimens of satisfactory size of this widely used and well-known substance. The zinc ores include a great variety of the brilliantly colored smithsonites for which Laurium is famous. Besides the ores there are two lots of the slags from the silver smelting operations of the ancient Greeks between 600 B.C. and 400 B.C. which are now being resmelted to save the silver that the early smelters could not extract. The New Zealand Commission presented a restoration of the giant, extinct bird known as the Moa. This restoration was prepared with great care at the New Zealand Museum, and shows a bird standing over 12 feet in height with a body measuring 8 feet in length. The probable feather covering is shown, also the form and dimensions of the bird. The great size of this creature makes it an object of special interest. A very valuable accession obtained largely through the efforts of Mr. W. J. Chalmers, consisted of 40 specimens of tin and copper ores presented by the leading tin mining companies of South Africa. These ores had not been previously represented in the collections and they are also of importance since they show characters not seen in the tin ores of other regions. Mr. Chalmers also kindly presented two especially fine crystals of gem tourmaline from California and a specimen of crystallized gold from French Guiana. A series of pebbles from Wyoming showing unusual polishing by wind, was presented by Messrs. Geo. F. Porter and A. A. Sprague. From the Chamber of Commerce of Chloride, Arizona, a representative series of the gold, silver, lead, and other ores of that district was received by gift, making a valued addition. An interesting series of 15 specimens illustrating the manufacture of potash and other products from alunite and of nitrogen products manufactured from the air, was presented by the Armour Fertilizer Works. In this connection also, the gift by Professor S. H. Knight, of the University of Wyoming, of specimens of the leucitic rocks of Wyoming, which are considered possible sources of commercial potash, is worthy of mention. The Titanium Alloys Manufacturing Company presented a specimen of metallic titanium, which is a rarely produced substance, together with specimens of two ferro-titanium alloys. The Norton Laboratories gave a large bar of metallic magnesium. A series of pegmatite products used in cement facing and two large masses of pegmatite were donated by the Crown Point Spar Company of Essex, New York. Professor E. L. Moseley of Bowling Green, Ohio, gave some interesting specimens of celestite and invertebrate fossils. By exchange, 13 specimens of stream concretions were obtained from Professor F. Justin Roddy and specimens of the Dalton and Lake Okechobee meteorites were received from the United States National Museum. An iron meteorite from Batavia, New York, weighing 5,930

grams, and an individual weighing 2,000 grams of the Plainview, Texas, meteorite fall were purchased, as were also specimens of four other meteorites. Eight specimens of the peculiar glassy forms called australites were also purchased. By collection, about 40 specimens of fossils and economic specimens were added as a result of the Curator's trip to La Salle County, Illinois, and 75 specimens minerals, dendrites and rock products, from field work in Maine. The Assistant Curator collected in Arizona 20 specimens of copper ores and fossils.

In the Department of Zoology the most important accession of the year is a very fine and practically perfect egg of the extinct bird *Aepyornis*. It was purchased from Mr. Peter A. Bjelde who obtained it from natives in Madagascar and personally brought it from there to this country. The first installment of the Museum's share of the birds taken on the Collins-Day expedition consisting of 215 bird skins were received from the American Museum of Natural History. The mammals of this expedition were received early in the year but have not yet been accessioned. A collection of 57 mammals and 76 bird skins from Argentina were presented by the Argentine Commissioners to the Panama-Pacific International Exposition and deserve special mention. Among them were a number of species new to the collection. To the collection of fishes and reptiles there were added but six specimens. One of them, however, a Yellow-bellied Sea Snake, was very desirable, as well as new to the Museum collection. By far the largest and most important addition than can be recorded was the Hall collection of shells, which was a donation from the heirs of Elihu Hall, Athens, Illinois. This collection consists mainly of American fresh-water shells and contains at least several thousand named specimens. As they have not yet been gone over and sorted by a specialist, the exact number of specimens that will be accessioned eventually cannot be definitely given at this time. Among the insects obtained, the most desirable were 63 Sphinx Moths secured, by an exchange, from Mr. B. Preston Clark of Boston. Of this lot at least thirty species were new to the collection. Another desirable, though smaller acquisition, was an exchange whereby 17 rare butterflies from northern India were secured. The accessions may be summarized as follows: Purchase: 138 mammals, 175 birds, 4 nests and eggs; By gift: 61 mammals, 306 birds, 14 nests and eggs, and approximately 3,000 shells; By exchange: 39 mammals and 80 insects.

EXPEDITIONS AND FIELD WORK.—A few days were spent by the Curator of Geology in visiting several localities in La Salle County, Illinois, and as a result specimens of a number of occurrences which had not been

previously represented in the collections were procured. The material obtained included specimens of cone-in-cone structure, stylolites and concretions, fossil ferns and a series of hydraulic limestones and cements. A collecting trip was also made by the Curator of Geology among the pegmatite regions of western Maine. A large number of valuable specimens of the rare minerals of the region, such as tourmaline, columbite, beryl, and herderite were procured, also some showy dendrites and a striking series illustrating zonal weathering. The Assistant Curator of Geology through a brief trip among most of the large porphyry copper mines of New Mexico and Arizona secured a representative though limited suite of the characteristic ores of this important new development of the mining industry. The large mines visited on this trip and from which specimens were secured were the Chino and Empire Zinc mines in New Mexico, and the Copper Queen, Old Dominion, Inspiration, and Miami mines in Arizona. At Grand Canyon, Arizona, also, he obtained a number of specimens of Cretaceous fossils, copper and silver ores and asbestos.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT.— There have been placed on permanent exhibition in the Department of Anthropology 90 new cases, most of these being completely labeled. The material installed in these cases is distributed over the various divisions as follows: African ethnology 27 cases; Melanesian ethnology 44 cases; American ethnology 1 case; American Archæology 7 cases, and Chinese pagodas 11. The interesting Mexican pottery from Casas Grandes presented by Mr. Homer E. Sargent has been installed in two standard cases in the East Court. The recent acquisition of Navaho blankets necessitated the reinstallation of a case of Navaho blanketry in Hall 6. Progress has been made in the installation in standard cases in the East Court, which, since the opening of the Museum, has been shown in the old Peabody cases from the World's Columbian Exposition. Four cases of the Hopewell material, from Ross County, Ohio, are well along toward completion in Alcove 83. The new arrangement on shelves is very satisfactory, and brings out to advantage the scientific value of this remarkable collection. The prehistoric pottery from Chiriqui Republic of Panama, has been permanently placed on exhibition in two standard cases in Alcove 93 of the East Court. Costa Rican archæology now in Alcove 84 is being prepared for permanent exhibition. All Peabody cases released, as the work of reinstallation progresses, are used for permanent storage in Halls 68 and 69 of the West Annex in accordance with the plan outlined a year ago. For the purpose of preserving and photographing material, work has been done in 138 exhibition cases. Installed cases of the Joseph N. Field collec-

tions have been moved from Hall 72 into Hall 80, thus giving needed floor space in the former for working purposes. One-fourth of the floor space in Hall 71 has been cleared with the result that desired additional room for installation work has been gained. The African collection was carefully overhauled, and a large amount of material previously unidentified was studied and placed in its proper grouping. This material is now divided into three groups: the first, intended for exhibition; the second, reserved for the study collection; the third, for exchange. The exhibition collection has been installed in twenty-seven standard cases fully labeled, and illustrated by maps and a considerable number of photographs. The most notable exhibit in this series is presented by the artistic cast bronze and ivory carvings from Benin, many of the specimens being of unusual excellence and rarity. The balance of the Northwest Coast of Africa, the Sudan, and the upper tributaries of the Nile, are represented by five cases. Collections from Somali-land and the Lake Region of Eastern Africa occupy 8 cases, illustrating different types of culture like that of the Arabised tribes, the war-like Masai, and the nomadic Wandorobo. A very complete collection from the Ovimbundu and Zulu gives an instructive view of the life and industries of these most advanced tribes of southern Africa. Congo material is displayed in 6 cases, showing the life of the Pigmies, as well as of the metal-working Bantu stock. An interesting feature of the last mentioned collection is a large group of fetish objects and other articles relating to the highly developed ceremonial and religious life of those peoples. In their present arrangement, the African collections, though still far from being complete, give a vivid picture of the various cultures of the continent, and likewise illustrate well the interrelations of the different tribes. Further progress has been made in the installation of the Joseph N. Field South Sea Islands collection, 44 cases devoted to Melanesian ethnology having been completed. This material covers the following regions. The two islands Buka and Bougainville, belonging to the group of the Solomon Islands, are fully represented by 8 cases. Especially noteworthy in this exhibit are wood carvings including one large human statue, the peculiar balloon-shaped hats worn by the Matasene, the young men who are initiated into a secret society; the huge ended baskets, wooden platters, heavy stone nut-crackers, and a complete series of stone implements, showing the different ways of hafting the axes. The central Solomons are represented by objects inlaid with pearl and by a large wooden bowl. Fourteen cases are devoted to New Ireland, with a display of huge ancestral images of wood and memorial carvings (from central New Ireland and the Gardner Islands), ancestral figures of stone, and a great variety of masks,

some very elaborate. The different types of clubs and spears, including those terminating in worked human bone, are completely represented. Native life on the island of New Hanover is shown in another case. The elaborately decorated clubs and spears of St. Matthias together with large ornamented combs, and woven mats and belts occupy two cases. The same number of cases illustrates the culture of Lihir, Aneri, Tanga, Nissan, small islands east of New Ireland, the manufacture of shell arm rings from Tanga and shell money from Nissan being especially noteworthy. Two further cases are concerned with Lord Howe, Mortlock, Tasman, and Sikaiana, small islands lying north of the Solomons, but showing a culture with Micronesian and Polynesian, rather than Melanesian affinities. New Britain is represented by a very complete collection, in sixteen cases, from the Gazelle Peninsula. It includes many valuable old specimens obtained and figured by Richard Parkinson, also a number of remarkable Baining and Sulka masks, numerous specimens from central and western New Britain as well as from the neighboring islands, showing a strong New Guinea influence. A representative collection from the southwest coast about Cape Merkus illustrates the life and industries of the people. There is a series of their finely carved wooden bowls, coiled baskets, painted bark-cloth, feather head-dresses used in dances, and personal ornaments. The Philippine material has been revised and partially reinstalled. The models of Chinese pagodas have been installed in three standard four-foot cases and eight special cases arranged in Hall 48 of the East Annex. This Hall was opened to the public at the end of the year. The Chinese gateway has been erected on the east side of the Rotunda.

In the Department of Botany the following cases have been installed, labeled and placed on exhibition: in the American Forestry Series: Sweet Buckeye; Fraser's Fir; Southern Red Cedar; Loblolly Bay; Silver Bell; Pennsylvania Cherry; Ogeche Lime; Water Gum; Black Cherry; and Basswood. Specimens, with their labels, sufficient for the installation of twelve other cases have been fully prepared and are ready to be put in place as soon as the cases for their accommodation are furnished. Installation in the herbarium cases has been sadly interfered with on account of lack of space in the rooms available to this section of the department. It has become necessary to remove from installation all specimens in the lower plant orders, wrap them up in bundles and store them away, in order to give up their place in the cases to families more frequently consulted. This has also been necessary in the case of newly arriving Eurasian plants, until the end of the year reveals over three hundred such bundles rendered unavailable for study or reference. A discouraging amount of time and labor had to be

wasted in shifting and re-shifting installed specimens in order to make room for the installation of new material and keep the collection as available as possible in the cramped quarters they occupy. Space for the organization and preparation of the Elihu Hall herbarium was gained by shifting a number of exhibition cases into a hollow square on the exhibition gallery and connecting the case with the preparator's room.

In the Department of Geology three halls, Nos. 60, 61, and 62, which had been closed to the public for several years were reinstalled and reopened. In two of these halls are now exhibited numerous large, vertebrate fossils of Pleistocene age, including skeletons of the Cave Bear and large birds of New Zealand, the mastodon skull found at Yorkville, Illinois, and restorations of the giant sloth, large turtle, large armadillo or Glyptodon, and fossil shark jaws. Various bones of the mammoth and mastodon, small whales and Tertiary titanotheres are also shown in these halls, and a series of the large, corkscrew-like forms known as *Diamondix*. In addition, a model of the above-ground workings of the Shui kao Shan lead mine, Hunan, China, has been installed in Hall 60. This model covers an area of about 170 square feet. It is enclosed in a case thirteen feet square and placed on a base three feet high. The case and base were constructed at the Museum, the model itself was the gift of the Chinese Commission to the Panama-Pacific International Exposition. The model illustrates on a scale of 1:135 the plant at the surface of the mine, and the ore dressing works at which the ore is prepared for smelting. The plant was built by European trained men and illustrates the extent and variety of operations carried on in modern mining. A large specimen of the ore obtained at the mine accompanies the exhibit. To the third hall, Hall 62, of the group recently opened, the petroleum collection previously exhibited in Alcove 107 was transferred, with some additions. As now installed, the collection comprises nine wall cases, two pyramidal floor cases and two flat floor cases of specimens. Of these cases, five are devoted to the petroleum produced in different oil fields, one to a quantitative exhibit of the products of one barrel of petroleum, four to various finished products of petroleum, and three to specimens of petroleum-bearing sands and rocks and their characteristic fossils. To the space left vacant in Alcove 107 by the removal of the petroleum exhibit, five cases containing stone and iron meteorites were moved and fully reinstalled. One of these cases was devoted to Canyon Diablo meteorites, of which the collection contains a large number of specimens varying in weight from 1013 lbs. to a few ounces. The total weight of this meteorite thus exhibited is over 5,000 lbs. In other cases all the larger



TYPE OF CASE LOANED TO PUBLIC SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM.

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stone and iron-stone meteorites were placed, the specimens being grouped so as to bring those of the same class together. At the same time the opportunity was improved to definitely group all the meteorites, the grouping being on the basis of a classification founded on structural features. In Hall 31 a number of series have been rearranged with or without the addition of new material. One of these is a collection of volcanic products which has been so reorganized as to exhibit the characteristic products of each locality in groups. At present, good series of the products of the volcanoes of Vesuvius, Popocatepetl, Kilauea, Sakurijima, the Auvergne region and many localities in the western United States are shown. A special addition made to the products of Vesuvius was a series of specimens of volcanic ash thrown out during the eruption of April, 1906. These specimens show the changes in the character of the ash during successive days of the eruption. Photographs of a recent eruption of Sakurijima were installed among the products of that volcano. Other additions made to the series of dynamical geological products in Hall 31 include six splendid specimens of zonal weathering which were collected by the Curator in Maine, specimens of dendrites similarly collected, a number of specimens of cone-in-cone structure, stylolites, etc., collected by the Curator in Illinois, and a number of specimens showing several varieties of weathering. Another change made in the installation of this hall was the removal to storage of the series of New York rocks and the installation in its place of collections illustrating the uses of lime and of borax. In the collection illustrating lime and its uses, a number of varieties of limestone and lime from various localities are shown and following these, illustrations of chemical and agricultural uses of lime and limestone, uses of lime for paints, plasters, and cements, medical uses of lime, etc. In the borax collection are shown various borax minerals, various refined boraxes, and illustrations of the uses of borax in the arts. Another collection prepared and installed in this hall was one illustrating sources and uses of potash. Various rocks and minerals containing potash in appreciable quantities are exhibited in this collection and many of the finished products from these rocks, including not only potash but alumina, sulphuric acid, etc. The collection illustrating magnesia and its uses was considerably enlarged and rearranged, additions of Indian and Grecian magnesite, raw and calcined, being made, also of metallic magnesium, hydraulic cements, magnesia packing, etc. To the sulphur collection were added some interesting specimens of molded sulphur received from China. Some additions were also made to the economic barite and fluorite collections. A magnetic compass was installed in connection with the large specimen of lodestone in Hall 30, the compass

being supported on a pivoted brass arm in such a manner that it can be moved by the visitor in a semi-circle about the lodestone. The attraction of the lodestone causes a reversal of the ends of the needle and a constant pointing of the needle towards the stone, thus illustrating its permanent magnetic properties. In Sliff Hall, a number of additional collections have been installed, space for introduction of new material having been gained by removal of some previously exhibited. In place of two cases of onyx, the case of products of coal received from the London, England, Gas Light and Coke Company was installed. This case contains over 200 large and showy specimens representing the products of coal, such as coke, ammonia compounds, carbolic acid, prussiates and cyanides, cresolates, dyes and pigments. The whole makes a brilliant and instructive exhibit and one of special interest at this time, since the domestic production of many of these compounds has become desirable in view of the difficulty of obtaining them from abroad. The exhibit is installed in a case received from the London Company, some alterations having been made in it to make it harmonize in appearance with the other cases in the hall. To other collections in the hall a large number of additions have been made, chiefly of material received from the Panama-Pacific International Exposition. The greatest of these additions has been made to the tin ore collection. The additions include the splendid series of South African tin ores obtained through the generous efforts of Mr. W. J. Chalmers, about an equal number of Bolivian tin ores, 15 specimens of Australian tin ores and some tin ores from scattering localities. Owing to increased interest in tungsten ores, this collection also was completely rearranged, and a full series from most of the important localities producing such ores at this time was procured and exhibited. The collection of gold and silver ores of Ontario has been reinstalled with the addition of specimens representing several of the newly discovered gold districts. Part of the copper ore collections have been revised, with the addition of specimens representing the "porphyry" ores of the United States, and typical ores of copper mining districts of Bolivia, South Africa and China. A series of Chinese ores has been added to the iron ore collection. Specimens from the Panama-Pacific International Exposition and from the material received from Mr. W. J. Chalmers have been installed with the ores of gold, silver, lead, tungsten, and mercury, thus materially strengthening these collections. A collection from the potash deposits of Utah illustrating the ores and their aluminum salts which are their by-products, has been installed with the aluminum ores collection. A complete skeleton of the American camel *Oxydactylus longipes*, of the lower Miocene period, was installed in a floor case in Hall 36.

This camel was remarkable for its size and slender structure, the slenderness being such as to make the skeleton difficult to mount. In order to obtain sufficient rigidity, steel sockets were set in the limb bones at intervals and these served as fastenings for pieces of half-round steel which were placed along the surfaces of the bones. In this way a firm but graceful mount was secured. The base of the mount was made of material imitative of the matrix in which the skeleton was found. In an adjoining case a fore leg of *Alticamelus*, another American camel remarkable for the size and length of its limb bones has been installed; and in still another case a number of skulls and limb bones of Miocene camels and horses have been placed. All of this material was collected by Museum expeditions in the western states. The skeleton of the saber tooth cat in this hall was transferred to a plaster base imitating the matrix from which it was taken. The series of Jurassic mollusks from Patagonia collected by Professor Salisbury has been installed in Hall 36, and a case of Devonian fossils has been brought from Hall 61 and installed in this hall. In the paleontological laboratory the cleaning and mounting of a skeleton of *Oxydactylus* has been completed; a fore limb of *Alticamelus* has been prepared and mounted; a skeleton of a small, Miocene, burrowing carnivore found in one of the peculiar corkscrew-like forms occurring in Nebraska has been prepared for mounting; two partial skeletons of the Oligocene three-toed horse, *Mesohippus bairdii*, have been prepared, as have also a large skull of *Diceratherium* and fore limbs of the smallest Miocene horse, *Merychippus*; the mounting of a skeleton of a fossil wolf from the Los Angeles beds has been nearly completed and the skeleton of the saber tooth cat from the same locality has been transferred to a base imitative of the matrix from which the specimen was obtained.

In the Department of Zoology the reinstallation of the shell exhibit has been continued during the year. Seven cases of shells were installed, 10 of the new A-cases now being filled. Of this number 7 have been permanently labeled. Some idea of the amount of work required to install a case may be formed when it is stated that one of those just filled contains 2,829 shells, most of which has to be mounted in a special manner and which required 718 tablets and almost the same number of individual shelves for their installation. In the Division of Osteology 337 skulls and 12 skeletons were prepared. Three skeletons were also prepared for the exhibition collection. The usual precautions were taken against the depredations of insect pests and all collections were disinfected. Most of the exhibition cases are now provided with devices which permit disinfection without opening the case. In the serial collection of mammals on exhibition, rearrangement and elimination of

duplicates and imperfect specimens has been commenced. Early in the year material in the taxidermists' shop was thoroughly overhauled and a few old specimens of no value, were condemned and destroyed. The skin dresser has been occupied most of the time in preparing skins of large mammals recently obtained. The group of Alaska Moose has been finished and installed in an alcove of the west court. It is the largest single group thus far produced in the Museum shops and is undoubtedly the best representation of this splendid game animal in existence. In a case 14 feet in width and 12 feet in depth and provided with a large painted background the scene reproduced is of the interior of Kenai Peninsula, Alaska, with a foreground of poplars, willows, small spruce, and mixed low vegetation a background of lakes and streams and snow-clad mountains. Four animals are shown, an old bull, a young bull, an adult cow and a calf of the year. The skins of these are in the finest possible condition, having been personally collected, preserved, shipped, dressed and mounted by a taxidermist of the Museum force. The antlers of the old bull of this group are the largest of which there is authentic record, the total spread between outermost point being 78½ inches. These "record" antlers have been in the possession of the Museum for some years and on account of their special interest it was decided to take them from storage and make them available to the public by placing them in this group even though it was necessary to associate them with the skin of an animal not the one which bore them originally. Therefore they were mounted with the skin of another old bull of very large size and the facts stated on the label. During the year work has progressed on other mammal groups notably the capybara and jaguar group which require the preparation of a large amount of artificial tropical vegetation. It is now almost ready for installation. Plans and preliminary models have been made for a new group of American Bison in which entirely fresh specimens of high quality will be used. The group formerly prepared under difficulties from relatively poor material has been dismantled. Living animals for the new group have been selected and as soon as they are in proper condition will be prepared for use by the Museum taxidermists, who will thus be able to take all necessary measurements and life studies. A few additions to the systematic exhibition of mammals have been made, the most important being a pair of Saiga antelope, a species from the steppes of western Asia having unusual amber-colored horns and long tubular overhanging nostrils. Other mammals added to this series include South American Carnot, the wild progenitors of Guinea pig, African wild rats, and fresh specimens of North American hares. The fourth and final unit of the first four-section case of tropical

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CHINESE GATEWAY CARVED FROM TEAKWOOD.
Made by the Carpenters of Kichang near Peking.

bird groups was finished and installed. The group shown consists of birds characteristic of the low tropics of north-central Brazil where one of the Museum's expeditions worked a few years ago. The most conspicuous of these are the large tropical American storks known as the Jabiru. Others included with them are ibises, sun bitterns, gallinules, and boatbills. Thirty-six mounted birds from Argentine and twenty from North America, including a Passenger Pigeon, were added to the serial exhibition collection.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

—At the close of the year 476 cases were available for circulation among the public schools, 86 cases having been installed during the year. Six cases were permanently withdrawn from the supply and sent to the Museum of History, Art and Science of Los Angeles. There are also many cases on hand in various stages of preparation and installation. Not only do the members of the staff of this Department install all of the specimens of birds, mammals, fishes, reptiles, and insects, but they collect and prepare them for installation as well. Nearly all of the butterflies and birds found in and around Chicago are represented either by specimens installed or by specimens that have been partially prepared for installation. In many of the cases in which birds, mammals and reptiles are shown, enlarged colored photographs of the habitat or of characteristic environments of the specimens, form backgrounds. These backgrounds add greatly to the naturalness of the taxidermy and to the realism of the accessories employed, and reduce the use and need of much of the latter.

Sufficient time has elapsed since the inauguration of this work to permit competent judgment being passed upon the physical merits of the exhibition cases. It is gratifying to report that the type of case used has met all requirements demanded of it. The claim for the secureness of the installation of all specimens is well supported by the fact that thirty-four installed cases were transported by freight to San Francisco and returned, and not in a single instance was it necessary to repair any damage and in but one instance was it necessary to reinstall a specimen—that one being of a friable nature. The number now on hand of empty cases of the four and ten inch types is so small that a requisition for additional new cases will be made within a short time. It is more than likely, owing to space limitations, that with additional new cases some method, other than that now in use, for caring for empty and installed cases will have to be adopted. Representatives of the principals of the Chicago public schools expressed a desire to have types of the extension cases placed on permanent exhibition in one of the rooms of the Board of Education.

The school authorities sanctioned this request and granted permission to make the exhibition and designated for that purpose a room used by the principals and teachers as a committee room. Plans for displaying them are being perfected. An exchange of cases will be made. In compliance with the request of the president of the American Association of Museums to have an exhibit of the Museum extension cases made at a meeting of the association held in Washington, D. C., May 15-18, four cases were sent. In conjunction with the exhibition of the cases, there was read a brief paper prepared by the Curator on "The Development of The N. W. Harris Public School Extension of Field Museum of Natural History." Several cases containing birds have been loaned for a brief period to the Chicago Art Institute for the purpose of study by classes in nature study. A most painstaking and thorough investigation of the methods of installing the cases and the system of recording and circulating them among the schools, was made by Professor Yazo Wado of the Department of Natural Science, First National College, Tokio, Japan, with the view of introducing the same or similar methods in Japan. The Public Museum of Oakland, California has adopted for its extension work, cases and methods similar to those of this Department.

As an evidence of the value of the cooperation between The N. W. Harris Public School Extension of Field Museum of Natural History and the public schools of Chicago, the following letter from John D. Shoop, superintendent of schools, to Director Frederick J. V. Skiff, is offered:

"I deem it a duty as well as I esteem it a privilege to write you in testimony of the results that, in the past few years, have attended the closer cooperation that has been established between the public schools and the Museum.

"The bequest made by Mr. N. W. Harris has proved of great value to the schools. The exhibits that have been assembled under the direction of Mr. Simms are valuable factors in intensifying and enlarging the interest of the pupils in the spheres of industry and nature. I am certain that you will be pleased to know that the movement made possible through the benevolence of Mr. Harris is eventuating in so much of interest and profit to our public school system."

PHOTOGRAPHY AND ILLUSTRATION. — The following is a tabulation of the work performed in this section:

	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Enlarge- ments made	Number of Negatives developed for Expe- ditions	Number of 6½x8½ Posi- tives made. Used in making large Negatives
General	16	61	..	..	..	..
Anthropology	232	146	18	..	..	..
Botany	10	61	..	..	10	..
Geology	22	68	..	10	..	4
Zoology	6	180	..	..	6	..
Harris Extension	6	7	..	..	..	..
Distribution . . . . .	..	56	..	..	..	..
Gift . . . . .	..	94	..	..	..	..
Sale . . . . .	..	137	2	..	..	..
Totals	292	810	20	10	16	4
Total number of Catalogue entries during year 1916						1,152
Total number of Catalogue entries to December 31, 1916						114,455
Total number of Record Books						20

PRINTING.—The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	4,509	1,250
Botany	234	30,200
Geology	1,478	1,000
Zoology	2,560	150
Library . . . . .	.....	3,250
General . . . . .	.....	17,730
N. W. Harris Public School Extension	1,036	2,950

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT

RECEIPTS AND DISBURSEMENTS

January 1, 1916, to December 31, 1916

RECEIPTS

Cash in Treasurer's hands, General Fund, December 31, 1915	\$4,148.39
Cash in Treasurer's hands, New Exhibition Cases Fund, December 31, 1915	912.71
Cash in Treasurer's hands, Endowment Sinking Fund, December 31, 1915	56.00
Petty Cash on hand, December 31, 1915	129.95
Dues of Life Members	25,000.00
Dues of Annual Members	990.00
Admissions and Check Rooms	5,413.35
Sale of Guides (Profit)	220.25
South Park Commissioners	15,000.00
Interest on Investments and Bank Balances	9,552.15
Field Endowment Income	141,500.00
Field Endowment Sinking Fund	1,109.51
Field Endowment Sinking Fund Investments retired	309.25
Field Endowment Sinking Fund Income	359.32
Life Memberships Fund Income	327.97
Life Memberships Fund Investments retired	1,907.88
New Exhibition Cases Fund Investments retired	4,850.00
New Exhibition Cases Fund Income	479.50
New Building Moving and Furnishing Fund Income	128.00
Stanley Field Plant Reproduction Fund	100.00
Stanley Field Ornithology Fund	1,000.00
Arthur B. Jones Buffalo Group Fund	479.72
H. W. Jackson Library Fund Income	40.00
Donations:	
W. J. Chalmers	\$ 200.00
Arthur B. Jones	600.00
Homer E. Sargent	200.00
Sale of Picture Postal Cards	661.62
Guards' Uniform Account	311.50
Sundry Receipts	68.35

\$206,738.70

DISBURSEMENTS

Salaries		\$71,161.98
Guard Service		12,006.13
Janitor Service		6,807.34
Fire Protection		3,306.64
Light and Heat		13,132.28
Repairs and Alterations:		
Wages — Carpenters, Painters, Roofers, etc.	\$7,799.01	
Materials used — lumber, paints, oils, glass, etc.	554.83	8,353.84
Furniture and Fixtures:		
Cases and Bases	5,365.00	
Office Furniture and Herbarium Cases	845.00	6,210.00
The Library:		
Books and Periodicals	805.60	
Binding	552.85	
Sundries	136.98	1,495.43
Collections, etc., purchased		14,848.28
Installation expense		2,158.79
Expeditions		18.55
Publications		1,587.21
Picture Postal Cards		232.65
Sections of Photography and Printing — Supplies		323.44
General Expense Account:		
Freight, Expressage and Teaming	\$1,211.65	
Stationery, Postage and Telephone	826.48	
Liability Insurance	663.52	
Sundries	1,500.09	4,201.74
Stanley Field Plant Reproduction Fund		78.55
Arthur B. Jones Buffalo Group Fund		125.00
Stanley Field Ornithology Fund		925.00
H. W. Jackson Library Fund — Investments		20.00
New Building Moving and Furnishing Fund — Investments		23,400.00
Life Memberships Fund — Investments		26,321.25
Picture Postal Cards Fund — Certificate of Deposit		375.76
Endowment Sinking Fund — Investments		1,010.00
General Fund Investments (In Suspense)		2,225.00
		<u>\$200,324.86</u>
In Treasurer's hands, December 31, 1916:		
General Fund	\$2,188.49	
New Exhibition Cases Fund	791.60	
Life Memberships Fund	1,514.60	
Sundry other Funds	1,179.20	5,673.89
Petty Cash on hand, December 31, 1916		<u>739.95</u>
		<u>\$206,738.70</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1 TO DECEMBER 31, 1916

ATTENDANCE.

Paid Attendance:		
Adults	18,088	
Children	1,827	19,915
Free Admission on Pay Days:		
School Children	5,033	
Students	3,179	
Teachers	605	
Members:		
Corporate	29	
Annual	31	
Life	9	
Officers' Families	41	
Special	84	
Press	2	9,910
Admissions on Free Days:		
Saturdays	49,779	
Sundays	129,439	177,218
Total Attendance		207,043
Highest Attendance on any one day (July 9, 1916)		7,686
Highest Paid Attendance on any one day (July 2, 1916)		640
Average Daily Admissions (364 days)		568
Average Paid Attendance (258 days)		77

RECEIPTS.

Guides sold — 881 at 25 cents each	\$ 220.25
Articles checked — 14,159 at 5 cents each	707.95
Admissions	4,795.49
	<hr/>
	\$5,723.69

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RESTORATION OF JAW OF FOSSIL SHARK (Lampricide), WITH JAW OF MODERN SHARK
FOR COMPARISON.

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, E. E., Chicago.

38 objects of stone comprising milling stones, small mortar, pestles, balls, celts, grooved axes and hammers—near Phoenix, Arizona.

6 buckskin dance skirts, 2 dance aprons, 3 ceremonial feather headbands, 1 basket quiver—California.

BARRETT, MRS. S. E., Chicago.

1 large green quartz image—Mexico.

CHINESE COMMISSION AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, California.

1 sulphur statuette—Shansi Province, China.

8 musical instruments—China.

DURNO, W. F., Chicago.

4 Japanese books on sword-guards—Japan.

FIELD, STANLEY, Chicago.

1 chert spear-head—Lake Bluff, Illinois.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 carved teakwood gateway and 84 models of Chinese pagodas—Sikkawei, near Shanghai, China.

1 Tibetan silver image, inlaid with pearls, turquoises, and corals, made in Lhasa—Tibet.

1056 flint implements and 20 casts—Northern France.

1 banded slate celt—Bradyville, Tennessee.

2 ancient Buddhist stone-relief sculptures—Peshawar, India.

800 specimens archæological material—Mexico.

7 Navaho blankets—Fort Wingate, New Mexico.

FREER, CHARLES L., Detroit, Michigan.

Reproduction of famous landscape roll by Ma Yüan, with pamphlet—China.

GUNSAULUS, DR. FRANK W., Chicago.

926 Japanese sword-guards and sword furniture.

HOLBROOK, MISS FLORENCE, Chicago.

4 specimens Eskimo boots, gloves, and pocket-book, of sealskin—Greenland.

MAC DOWELL, C. H., Chicago.

1 stone celt—Malmö, Sweden.

MARTIN, HENRI, Paris, France.

100 fragments of bones, human and animal, and 125 specimens of flints—La Quina and St. Croix, France (exchange).

1 cast of prehistoric skull (exchange).

MOORE, CLARENCE B., Philadelphia, Pa.

1 plaster cast of monolithic hatchet — Moundville, Alabama.

NEUBERGER, LOUIS, Chicago.

1 bow and 6 arrows — Philippines.

PARKER, LUTHER, San Francisco, Cal.

125 ancient fragments of pottery, skulls, and other material from caves;
basketry — Philippine Islands.

SARGENT, HOMER E., Chicago.

2 fine old Navaho blankets, one of bayeta.

162 specimens of prehistoric pottery — Casas Grandes, Chihuahua, Mexico.

20 feather plumes used in deer-skin dance of the Karok — California.

SILVA, DR. SIMOENS DA, Rio Janeiro, Brazil.

1 axe, 1 grooved stone implement, 1 pestle of diabase — Brazil (exchange).

SMITH, FRED. M., Chicago.

1 Indian saddle complete with stirrups — Nebraska (exchange).

SMITH, MRS. E. S., Chicago.

Beaded shoulder bag and beaded belt — Ojibway Indians.

SPRAGUE, ALBERT A., 2nd, Chicago.

1 grooved stone axe — Chicago.

STARKEY, MRS. HORACE M., Chicago.

1 feather cape — Sandwich Islands.

DEPARTMENT OF BOTANY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AMES, OAKES, North Easton, Mass.

258 herbarium specimens — Philippine Islands (exchange).

ARGENTINE REPUBLIC COMMISSION AT PANAMA-PACIFIC
INTERNATIONAL EXPOSITION, San Francisco, Cal.

18 planks of various woods, 3 Quebracho products, 24 herbarium speci-
mens — Argentine Republic.

BALL, CARLETON R., Washington, D. C.

30 herbarium specimens — various localities.

BRENCKLE, J. F., Chicago.

52 herbarium specimens — various localities.

COPULOS, MILTON D., Chicago.

4 photographs of plant reproductions.

DE SELM, JUDGE ARTHUR W., Kankakee, Ill.

1 herbarium specimen — Illinois.

ELK TANNING COMPANY, Ridgeway, Pa.

7 specimens tan barks — Bahia, Brazil.

FIELD MUSEUM OF NATURAL HISTORY.

Collated by C. F. Millsbaugh:

102 illustrations and descriptions of plants mounted as herbarium specimens.

Collected by O. E. Lansing, Jr., and E. E. Sherff:

92 herbarium specimens — Illinois.

Purchases:

308 herbarium specimens — Alberta, Canada.

485 herbarium specimens — Philippine Islands.

- 371 herbarium specimens — California.
151 herbarium specimens — Philippine Islands.
335 herbarium specimens — Florida.
- FILEK, FRANK R., Chicago.
46 herbarium specimens — Illinois.
- GAUMER, GEORGE F., Izamal, Yucatan, Mexico.
314 herbarium specimens — Yucatan.
- GRECIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL
EXPOSITION, San Francisco, Cal.
4 olive products — Greece.
- GRANT, J. M., Sequim, Washington.
76 herbarium specimens — Washington (exchange).
- HALL, ELIHU, FAMILY OF, Athens, Ill.
The private herbarium of Elihu Hall.
- HAWLEY, MRS. HELEN D., Cedars, Canada.
Her private herbarium — various localities.
- HANSEN, A. A., State College, Pa.
1 herbarium specimen — Pennsylvania.
- HYNES, J. A., Chicago.
1 skeletonized leaf (*Magnolia macrophylla*) — Germany.
- JOHNSON, FRANK W., Chicago.
77 herbarium specimens — Michigan.
- KING, MISS ANNA A., Highland Park, Ill.
397 herbarium specimens — Kentucky.
- MARSH, C. D., Salina, Utah.
3 herbarium specimens — Utah.
- MILLSPAUGH, C. F., Chicago.
30 herbarium specimens — Wisconsin.
9 specimens seeds — market.
2 specimens seeds — various localities.
1 plant description.
1 drawing — seeds of *Salix*.
- MILLSPAUGH, C. F., and LANSING, O. E., JR., Chicago.
22 herbarium specimens — Illinois and Indiana.
- NEW YORK BOTANICAL GARDEN, New York City.
7 photographs of herbarium specimens — Cuba (exchange).
1442 herbarium specimens — various localities (exchange).
- PARISH, S. B., San Bernardino, Cal.
1 herbarium specimen — California.
- PEACOCK, MISS BESS REED, Roswell, New Mexico.
11 herbarium specimens — New Mexico.
- SHERFF, EARL E., Chicago.
25 herbarium specimens — various localities.
- U. S. NATIONAL HERBARIUM, Washington, D C.
5 photographs of type species — various localities (exchange).
410 herbarium specimens — various localities (exchange).
- UNIVERSITY OF CALIFORNIA, Berkeley, Cal.
129 herbarium specimens — various localities (exchange).

DEPARTMENT OF GEOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALABASTER ART CO., Chicago.

2 statuettes, plain and bronze finish.

ALEXANDER, W. B., Seales Mound, Ill.

20 specimens vanadinite — near Tucson, Arizona.

AMERICAN BRONZE CO., Berwyn, Pa.

3 specimens bronze — Berwyn, Pa.

AMERICAN COAL PRODUCTS CO., New York City.

Chart showing products derived from coal.

AMERICAN SHEET AND TIN PLATE CO., Chicago.

3 specimens showing manufacture of tin and terne plate.

ARMOUR FERTILIZER WORKS, Chicago.

13 specimens of alunite and products, 2 specimens synthetic nitrogen products — various localities.

ART STONE CO., THE, Waynesboro, Pa.

4 specimens scagliola — Waynesboro, Pa.

AUSTRALIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

61 specimens of ores and minerals — New South Wales.

BARRETT COMPANY, New York City.

1 coal tar "tree."

BASS, W. W., Grand Canyon, Arizona.

3 specimens copper and silver ores, 1 specimen asbestos — Grand Canyon, Ariz.

BOLIVIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

80 specimens ores and minerals — Bolivia.

BRANT, A. J., South Porcupine, Ontario.

1 specimen gold ore — Porcupine District, Ontario.

1 specimen gold ore — Baston Creek, Ontario.

CHAMBER OF COMMERCE, Chloride, Arizona.

75 specimens ores — Chloride District, Ariz.

CHALMERS, W. J., Chicago.

2 tourmaline crystals — Mesa Grande, Cal.

1 specimen crystallized gold — French Guiana.

CHINESE COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

291 specimens ores and minerals and model of Shui Kao Shan lead mining and ore dressing works — China.

CORY, C. B., Chicago.

1 specimen marl — Oconto Co., Wis.

CROWN POINT SPAR CO., Crown Point, N. Y.

4 specimens pegmatite and 6 specimens crushed pegmatite — Essex Co., N. Y.

EMERSON, J. H., Porcupine, Ontario.

1 specimen asbestos — Porcupine District, Ont.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

8 specimens fossil ferns, 24 specimens cone-in-cone, stylolites, etc., 5 specimens hydraulic lime, 2 specimens shale—LaSalle Co., Ill.

33 specimens red and green tourmaline, beryl, herderite, lepidolite, garnet, etc., 18 specimens dendrite on quartz and beryl, 8 specimens concentric weathering, 16 miscellaneous—Oxford Co., Maine.

Collected by H. W. Nichols:

1 specimen river pebble—Fox River, Ill.

4 specimens quartz veins and 3 specimens rocks—Porcupine District, Ont.

19 specimens porphyry copper ores, gypsum, breccia, fossil shells and corals—Arizona and New Mexico.

Purchases:

1 meteorite—Plainview, Texas.

4 specimens meteorites—various localities.

1 iron meteorite—Batavia, N. Y.

8 specimens australites—Sydney, Australia.

3 specimens agrite—Germany.

1 section Cookeville meteorite—Cookeville, Tenn.

FULLER'S EARTH CO., Somerville, Tex.

1 specimen fuller's earth—Somerville, Tex.

GALLAGHER, J. F., Chicago.

25 specimens mineral abrasives and rocks—various localities.

1 specimen fibrous serpentine—Rudolph, Wis.

GARDEN CITY SAND CO., Chicago.

1 specimen hydrated lime, 4 specimens cement facings, 1 specimen artificial Caen stone.

GOVERNOR AND COURT OF DIRECTORS, GAS LIGHT AND COKE CO., London, England.

Collection illustrating by-products of gas manufacture, with case—London, England.

GREEK COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

315 specimens ores and mineral products—Greece.

HEATH, C. L., South Porcupine, Ontario.

4 specimens gold ore—Tashota, Kowkash District and Swastika, Ont.

HIGMAN, W. G., South Porcupine, Ontario.

1 specimen scheelite—Porcupine District, Ont.

HOTCHKIN, M. W., Kirkland Lake, Ontario.

1 specimen gold ore—Tough-Oakes Mine, Ont.

HUGHES, ROBERT W., Miami, Arizona.

4 specimens chalcocite pseudomorph after pyrite—Miami, Ariz.

INDIANA QUARRIES CO., Bedford, Indiana.

4 specimens lime and dressed limestone—Bedford, Ind.

JACKSON, ALLEN W., Temagami, Ontario.

1 specimen silver ore—Cobalt, Ont.

JEWELL, FRED, Osborn, Kansas.

1 section of ammonite—near Harlan, Kas.

KNIGHT, S. H., Laramie, Wyoming.

3 specimens orendite and wyomingite—Leucite Hills, Wyo.

- LEEUWPOORT (AFRICAN FARMS) TIN MINES, LTD.— Leeuwpoort,
 Transvaal, South Africa.
 3 specimens tin ores — Leeuwpoort, Transvaal, So. Africa.
- LONG, TONY, Chicago.
 Fossil trilobite — Thornton, Ill.
- LOUISVILLE CEMENT CO., Milltown, Indiana.
 4 specimens lime and limestone — Milltown, Ind.
- MAC DOWELL, C. H., Chicago.
 2 specimens molybdenite — Peru.
- MARSH, C. H., Marshfield, Oregon.
 1 specimen melanterite — Beaver Hill, Ore.
- MARTIN, F. E., Chicago.
 1 specimen barite — Elizabethtown, Ill.
- McALLISTER, MRS. JOHN, North Waterford, Maine.
 1 specimen diatomaceous earth — North Waterford, Me.
- MESSINA DEVELOPMENT COMPANY, LTD., Messina, Transvaal, South Africa.
 3 specimens copper ores — Messina, Transvaal, So. Africa.
- MOON, MRS. C. P., Chicago.
 15 specimens rocks and minerals — various localities.
- MORONEY, JOHN J., Chicago.
 2 specimens paper clay — near Macon, Ga.
- MOSELEY, E. L., Bowling Green, Ohio.
 8 specimens fossil shells, fossil coral, celestite and silver ore — Ohio and Nevada.
- NEW ZEALAND COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.
 Restoration of Moa — New Zealand.
- NICHOLAS, DR. F. C., New York City.
 2 specimens iron ores — Nogales, Ariz.
- NORTON LABORATORIES, INC., Lockport, N. Y.
 1 bar metallic magnesium.
- PATNAUDE, L. N., Platteville, Wisconsin.
 1 specimen zinc ore — Klar-Piquette Mine, Platteville, Wis.
- PATTEE, FRED, Chicago.
 1 specimen asbestos — near Casper, Wyoming.
- PIONEER ASPHALT COMPANY, Lawrenceville, Illinois.
 5 specimens asphalt products.
- PRUDEN, HARRY B., Chicago.
 1 specimen powdered coal — Chicago.
- ROBINSON, C. H., Normal, Illinois.
 34 specimens wind-polished pebbles — Musk Rat Canyon, Wyo.
- RODDY, F. JUSTIN, Millersville, Pa.
 13 specimens stream incrustations — Little Conowingo Creek, Millersville, Pa. (exchange).
- ROOIBERG MINERALS DEVELOPMENT COMPANY, LTD., Rooiberg,
 Transvaal, So. Africa.
 8 specimens tin ores — Rooiberg, So. Africa.
- RUEL, J. G., Chicago.
 12 specimens Indiana limestone — Bedford, Ind.
 3 specimens soils — near Pensacola, Fla.

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DEER OF ALPINE MOUNTAINS, COLORADO, MOUNTAIN VIEW, MOUNTAIN VIEW, COLORADO

SALA, C. A., Chicago.

12 specimens crystallized topaz, transparent beryl, crystallized tourmaline
— Mesa Grande, Cal.

SALISBURY, R. D., Chicago.

47 specimens fossil shells — Piedra del Aquila, Neugnen, Patagonia.

SCHROTT, FRED L., Salt Lake City, Utah.

2 specimens gold ore and 1 specimen cinnabar — Stanley, Idaho.

SHNABLE AND QUINN, Blue Island, Ill.

1 specimen orthoceras annulatum, 1 specimen cyrtoceras — Blue Island,
Ill.

SPRAGUE, ALBERT A., II, AND PORTER, GEORGE F., Chicago.

150 specimens wind-polished pebbles — Musk Rat Canyon, Wyo.

STE. GENEVIEVE LIME COMPANY, St. Louis, Mo.

3 specimens lime and limestone — Ste. Genevieve, Mo.

THURSTON, DR. FREDUS A., Chicago.

1 specimen stratified clay — Parry Sound, Ont.

TITANIUM ALLOY MANUFACTURING COMPANY, Niagara Falls, New
York.

2 specimens ferro-titanium alloys, 1 specimen metallic titanium.

TRANSSAAL CONSOLIDATED LAND AND EXPLORATION COMPANY,
LTD., Johannesburg, So. Africa.

9 specimens tin ores — Mbabane, Swaziland, So. Africa.

U. S. NATIONAL MUSEUM, Washington, D. C.

1 etched section of Dalton meteorite — Dalton, Ga. (exchange).

71 grams Lake Okechobee meteorite — Lake Okechobee, Fla. (exchange).

UNITED STATES TUNGSTEN CORPORATION, Ely, Nevada.

1 specimen rich tungsten ore — Ely, Nev.

WESTON, RALPH C., Los Angeles, Cal.

1 specimen gold ore — Oatman District, Ariz.

9 specimens rocks and minerals — Oatman District, Ariz.

WHITEHALL, C. C., Silver City, New Mexico.

4 specimens invertebrate fossils — Silver City, New Mexico.

WISCONSIN ZINC COMPANY, Platteville, Wis.

2 specimens blende and galena — Empire Mine, Platteville, Wis.

WOODVILLE LIME AND CEMENT COMPANY, Toledo, Ohio.

3 specimens limestone and lime — Woodville, Ohio.

ZAAIPLAATS TIN MINING COMPANY, LTD., Sterkwater, Potgietersrust,
Transvaal, So. Africa.

16 specimens tin ores — Sterkwater, Potgietersrust, Transvaal, So. Africa.

DEPARTMENT OF ZOÖLOGY

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ARGENTINE COMMISSION, PANAMA-PACIFIC INTERNATIONAL
EXPOSITION, San Francisco, Cal.

76 birds, 1 mammal — Argentina, So. Amer.

57 mammal skins — Argentina, So. Amer.

AVINOFF, ANDREW, New York City.

17 butterflies — Kashmir, India (exchange).

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BARNES, JUDGE R. M., Lacon, Ill.

1 Blue Goose.

BRANDLER, CHARLES, Chicago.

1 weasel, with skull — North Branch, Lake Co., Minn.

CHAVES, DIOCLECIANO, Managua, Nicaragua.

152 butterflies and moths — Managua, Nicaragua.

CLARK, B. PRESTON, Boston, Mass.

63 Hawk moths — various localities (exchange).

COLLINS-DAY EXPEDITION.

215 bird skins — South America.

DERBY, W. M., Chicago.

1 hybrid duck.

DOHMEN, U. A., Chicago.

1 scorpion — Chicago.

ECKSTRÖM, FANNIE H., Brewer, Me.

1 Star-nosed Mole.

EVANS, CHARLES L., Chetek, Wis.

1 Star-nosed Mole — Wisconsin.

FARRINGTON, O. C., Chicago.

8 specimens shells (16-valves) — Lake Keewaydin, Stonham, Me.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 Alaska red fox.

1 egg, *Aepyornis maximus* — Madagascar.

113 mammals (skins and skulls), 22 mammals in alcohol — Bolivia.

175 bird skins — various parts of Europe.

3 weaver birds' nests — Ambala, The Punjab, British India.

3 prairie hares — Kansas.

FRIESSER, JULIUS, Chicago.

1 Long-billed Marsh Wren (*Telmatoodytes palustris*) — Chicago.

GETZ, GEORGE F., Chicago.

1 dromedary — Damascus.

GUNDER, J. D., Chicago.

1 horn-tail — Yellowstone National Park.

HARRIS, N. W., PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM,

Chicago.

42 flies, beetles, sawflies and gall insects — Northern Indiana and Illinois.

HILL, CHARLES A., San Francisco, Cal.

1 beetle and 1 velvet-ant — Los Angeles and Orange Co., Park, Cal.

LAUFER, BERTHOLD, Chicago.

2 beetles — China.

LEOPOLD, N., JR., Chicago.

1 praying-mantis — Elkins Park, Virginia.

LILJEBLAD, E., Chicago.

6 moths and beetles — Northern Illinois and Indiana.

LINCOLN PARK ZOO, Chicago.

1 mandrill.

- MAIN, W. W., Maryhill, Washington.
1 nighthawk and cliff swallow's nest and eggs — Maryhill, Wash.
- McGRANER, A. C., Ancon, Panama.
1 scorpion and 5 snakes — head waters of Chagres River, Panama.
- OWEN, CHARLES L., Chicago.
9 beetles — Chicago.
- OWEN, V. W., Los Angeles, Cal.
14 dragonflies, bugs, grasshopper and katydid — Cochise Co., Ariz.
- PRAY, L. L., Chicago.
1 raccoon and one black squirrel (exchange).
- SKINNER, MRS. JANE B., Chicago.
1 mounted peacock.
- SODERBERG, MISS ELSIE, Chicago,
1 King Rail — Chicago.
- STAUFFER, D. L., Chicago.
1 Diamond rattlesnake — near San Antonio, Tex.
- STODDARD, H. L., Chicago.
1 Long-tailed Jaeger — Dune Park, Porter Co., Ind.
3 cicadas — Miller, Indiana.
- STUMP, MRS. H. E., Chicago.
2 mounted California quail.
- WALKER, ERNEST P., Wrangell, Alaska.
37 Alaskan mammals (exchange).
- WALTERS, L. L., Chicago.
1 chipmunk — near Jordan, Montana.
- WEBER, C. M., Balabac, P. I.
1 mouse deer and one civet — Philippine Islands.
- WILLARD, F. C., Tombstone, Ariz.
1 skin of fawn of white-tailed deer — near Tombstone, Arizona.
1 assassin bug — Tombstone, Arizona.
- WILLIAMSON, E. B., Bluffton, Ind.
2 Great-horned Owls and 1 Red-tailed Hawk.
- WOLCOTT, A. B., Chicago.
1 fly and 1 bug — Chicago.
- WOODBURY, FRANCES S., Chicago.
1 alligator and 1 fish — Florida.

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GUNSAULUS, FRANK W., Chicago.

1796 negatives of sword guards.

NICKERSON, MISS G., Pasadena, Calif.

20 photographs of California Indians.

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California University, Berkeley 13

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Leland Stanford Junior University, Stanford University 2

Lorquin Natural History Club, Los Angeles 4

Panama Pacific International Exposition, San Francisco (gift) 100

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Department of Agriculture, Hobart, Tasmania	1
Department of Agriculture, Melbourne	1
Department of Agriculture, Sydney	2
Department of Fisheries, Sydney	1
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Field Naturalists' Club, Melbourne	1
Geological Survey, Perth	3
Government of the Commonwealth, Melbourne	2
Linnean Society of New South Wales, Sydney	1
Public Library, Museum and Art Gallery, Adelaide	1
Royal Society of New South Wales, Sydney	1
Royal Society of South Australia, Adelaide	1
South Australian Ornithological Association, Adelaide	1

Technical Museum, Sydney	4
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Naturwissenschaftliche Landesforschung für Böhmen, Prague	1
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Museu Nacional, Rio de Janeiro	1
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Department of Mines, Ottawa	2
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Entomological Society of Ontario, Toronto	1
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Naturaliste Canadien, Quebec	1
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Numismatic and Antiquarian Society, Montreal	1
Ottawa Field Naturalists' Club, Ottawa	1
Provincial Museum, Victoria	2
Royal Canadian Institute, Toronto	15
University of Toronto	2
CENTRAL AMERICA	
Museo Nacional de Nicaragua, Managua	1
CEYLON	
Columbian Museum	2
Royal Botanic Garden, Peradeniya	1
CHILE	
Biblioteca Nacional, Santiago	3
CHINA	
Botanical and Forestry Department, Hong Kong	1
Royal Asiatic Society, North China Branch, Shanghai	3
DENMARK	
Académie Royale des Sciences et des Lettres de Danemark, Copenhagen	1
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EGYPT	
Institut Egyptien, Cairo	1
Survey Department, Cairo	1
ENGLAND	
Anthropological Institute of Great Britain and Ireland, London	1
Ashmolean Natural History Society of Oxfordshire, Oxford	1
Bristol Museum and Art Gallery	1
British Association for the Advancement of Science, London	2

British Museum (Natural History), London	7
Cambridge Antiquarian Society	1
Cambridge Philosophical Society	1
Cambridge University Library	18
Cardiff Naturalists' Society	2
Dove Marine Laboratory, Cullercoats, Northumberland	1
Free Public Museum, Liverpool	1
Great Britain Geological Survey, London	1
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	1
Lancashire Sea Fisheries Laboratory, Liverpool	1
Linnean Society, London	3
Liverpool Biological Society	1
Liverpool Marine Biological Station	1
Manchester Field Naturalists' and Archaeologists' Society	1
Oxford Delegates of University Museum	1
Royal Botanic Gardens, Kew	2
Royal Geographical Society, London	2
Royal Horticultural Society, London	1
Royal Society, London	2
Royal Society of Arts, London	2
South London Entomological and Natural History Society, London	1
Tring Zoological Museum	1
Wellcome Historical Medical Museum, London	2

FRANCE

Académie des Sciences, Paris	2
Ecole d'Anthropologie, Paris	1
La Nature, Paris	2
Société de Géographie, Toulouse	1
Société des Sciences Naturelles, La Rochelle	2
Société Nationale d'Agriculture, Paris	1

GERMANY

Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgs., Berlin	1
Deutsche Morganländische Gesellschaft, Halle	23
Geographische Gesellschaft, Munich	1
Gesellschaft für Erdkunde, Leipzig	1
K. Bibliothek, Berlin	1
K. Museum für Völkerkunde, Berlin	2
K. Sammlungen für Kunst und Wissenschaft, Dresden	2
Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel	1
Naturwissenschaftliche Wochenschrift, Jena	1
Städtisches Museum für Völkerkunde, Leipzig	1
Universitäts Bibliothek, Giessen	5
Verein für Vaterländische Naturkunde in Württemberg, Stuttgart	1
Verein für Volkskunde, Berlin	1

INDIA

Anthropological Society, Bombay	1
Archæological Survey, Burma	1
Archæological Survey, Calcutta	6
Archæological Survey, Peshawar	1

Colony of Mauritius	1
Department of Agriculture, Bombay	1
Department of Agriculture, Madras	1
Department of Agriculture, Pusa	1
Geological Survey, Calcutta	3
Government Museum, Madras	4
Indian Museum, Calcutta	8
National Indian Association, Calcutta (gift)	1
Royal Asiatic Society of Bengal, Calcutta	9
Royal Asiatic Society, Straits Branch, Singapore	17
Royal Botanic Gardens, Calcutta	3
Superintendent of Government Printing, Calcutta	3
IRELAND	
Royal Dublin Society	2
Royal Irish Academy, Dublin	2
ITALY	
American Society, Rome	1
Istituto Zoologico, Naples	1
Museo Civico di Storia Naturale, Genoa	1
R. Accademia delle Scienze, Turin	2
R. Scuola Superiore d'Agricoltura, Portici	3
R. Università Museo Zoologico, Naples	1
Società dei Naturalisti, Naples	1
Società Geografica Italiana, Rome	2
Società Geologia Italiana, Rome	1
Società Italiana di Antropologia, Florence	1
Società Italiana di Scienze Naturali, Milan	1
Società Romana di Antropologia, Rome	1
Società Toscana di Scienze Naturali, Pisa	1
Università Pavia. Istituto Botanico, Milan	1
JAPAN	
Anthropological Society of Tokyo	1
Bureau of Productive Industry Former Government, Taihoku	1
Geological Survey, Tokyo	2
Imperial University of Tokyo, College of Science	3
Tokyo Botanical Society	1
JAVA	
Bataviaansch Genootschap van Kunsten Wetenschappen, Batavia	2
Department of Agriculture, Buitenzorg	8
Jardin Botanique, Buitenzorg	1
MEXICO	
Instituto Biologico, Mexico	9
Instituto Geologico, Mexico	4
Sociedad Científica "Antonio Alzate," Mexico	1
NETHERLANDS	
Rijks Ethnographisch Museum, Leiden	2
Rijks Museum van Natuurlijke Historie, Leiden	2
Rijks Geologisch Mineralogisch Museum, Leiden	1
Stads Bibliotheek, Haarlem	1



BRASS CANNON, SO-CALLED LANTAKA, CAPTURED FROM THE MORO, PHILIPPINES.
Gift of Edward E. Ayer.

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UNIVERSITY OF ILLINOIS
URBANA

NEW ZEALAND

Auckland Institute and Museum, Wellington	1
Department of Agriculture, Wellington	3
Department of Mines, Wellington	4
Dominion Museum, Wellington	1

PERU

Cuerpo de Ingenieros de Minas, Lima	1
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SCOTLAND

Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries	1
Fisheries Board, Edinburgh	2
Geological Society, Edinburgh	1
Royal Botanic Society, Edinburgh	1
Royal Society, Edinburgh	2

SPAIN

Instituto Nacional de Ciencias Fisico-Naturales, Madrid	3
Junta de Ciencias Naturales, Barcelona	1
Museo de Ciencias Naturales, Madrid	1
R. Academia de Ciencias, Madrid	2
Sociedad Española de Historia Natural, Madrid	2

SWEDEN

K. Biblioteket, Stockholm	3
K. Svenska Vetenskapsakademien, Stockholm	1
K. Vitt. Hist. och Antik. Akademien, Stockholm	1
Svenska Sällskapet för Antropologi och Geografi, Stockholm Upsala University	1

SWITZERLAND

Geographisch-Ethnographische Gesellschaft, Zürich	1
Musée d'Histoire Naturelle, Lausanne	1
Musée Ethnographique, Neuchâtel	1
Musée Zoologique, Lausanne	1
Naturforschende Gesellschaft, Basel	1
Ostschweizerische Geograph.-Commerc. Gesellschaft, St. Gallen	1
Société de Physique et d'Histoire Naturelle, Geneva	2
Société des Sciences Naturelles, Fribourg	1
Société Neuchâteloise de Géographie	2
Universität, Bern	8

WEST INDIES

Agricultural Experiment Station, Porto Rico	1
Biblioteca Nacional, Havana	1
Department of Agriculture, Kingston	1
Estacion Central Agronomico, Santiago de las Vegas	2
Imperial Department of Agriculture, Barbadoes	2
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	2
Universidad de la Habana, Havana	2

Brazil, Vital, Sao Paulo, Brazil (gift)	1
Codazzi, Ricardo L., Bogota, Colombia	2
Carpenter, G. H., Dublin, Ireland	1

Caziot, E., Paris, France (gift)	1
Chodat, R., Geneva, Switzerland	17
Darwin, H., Paris, France	4
Hallam, Alfred C., London, England	1
Helm, Albert, Zurich, Switzerland	3
Lambe, L. M., Ottawa, Ontario	1
Morice, R. L., Paris, France	1
Northerne, Thomas W., London, England (gift)	3
Oates, Felix F., Buenos Aires, Argentina	1
Richter, Rudolf, Frankfurt-a-M., Germany	4
Sapir, Edward, Ottawa, Canada	1
Sergi, G., Rome, Italy	1
Sinçost da Silva, Antonio Carlos, Rio de Janeiro, Brazil	3
Wülling, E. A., Heidelberg, Germany	3

ARTICLES OF INCORPORATION

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D., 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,

Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science, and History.

3. The management of the aforesaid Museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Barnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black, and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed).

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurphy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Elwood Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlraat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel P. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, George P. Bissell, John R. Walsh, Chas. Fitzsimons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Ephraim W. Hatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL.]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(JUNE 12, 1916.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons, and Honorary Members.

SEC. 2. Annual members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause, or from indisposition to serve longer in such capacity, shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary, and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SEC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SEC. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

SEC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SEC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director and Chairman of the Administration Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the institution, subject to the authority of the Board of Trustees and its Committees. The

Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology, and Zoology, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be six Committees as follows: Finance, Building, Auditing, Pension, Administration, and Executive.

SEC. 2. The Finance, Auditing and Pension Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these five Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Administration Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four Members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly

elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SEC. 11. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 12. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, the Auditing Committee, and the Pension Committee, and

for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library publications, lecture courses, and all ~~scientific and maintenance activities.~~

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

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URBANA



BIRD LIFE IN NEOTROPICAL MOUNTAINS.

JAMAICA LANDING OF THE BIRDS. THE BIRDS ARE WITH THEIR WINGS SPREAD. THEY ARE ALL BIRDS OF THE SAME SPECIES. (SEE PAGE 172)

Sheldon Pratt Collection, New York

HONORARY MEMBERS.

EDWARD E. AYER	CHARLES B. CORY
MRS. TIMOTHY B. BLACKSTONE	HARLOW N. HIGINBOTHAM
STANLEY McCORMICK	
DECEASED, 1916.	
NORMAN W. HARRIS	

PATRONS.

ALLISON V. ARMOUR	GEORGE MANIERRE
EDWARD B. BUTLER	CHARLES H. MARKHAM
ALBERT M. COLLINS	JOHN S. MILLER
LEE GARNET DAY	JOHN BARTON PAYNE
ERNEST R. GRAHAM	HOMER E. SARGENT
FRANK W. GUNSAULUS	FREDERICK J. V. SKIFF
CHARLES L. HUTCHINSON	WILLARD A. SMITH
VERNON SHAW KENNEDY	
DECEASED, 1916.	
NORMAN W. HARRIS	

CORPORATE MEMBERS.

ADAMS, GEORGE E.	HIGINBOTHAM, H. N.
ALDIS, OWEN F.	HUTCHINSON, CHARLES L.
ARMOUR, ALLISON V.	JONES, ARTHUR B.
AYER, EDWARD E.	KEEP, CHAUNCEY
BARTLETT, A. C.	KENNEDY, VERNON SHAW
BLAIR, WATSON F.	KOHLSAAT, HERMAN H.
BUTLER, EDWARD B.	McCORMICK, CYRUS H.
CHALMERS, W. J.	MARKHAM, CHARLES H.
CHATFIELD-TAYLOR, H. C.	MANIERRE, GEORGE
CLARK, JOHN M.	MILLER, JOHN S.
COLLINS, ALBERT M.	MITCHELL, JOHN J.
CRANE, RICHARD T.	PAYNE, JOHN BARTON
DAY, LEE GARNET	PECK, FERD. W.
EASTMAN, SIDNEY C.	PORTER, GEORGE F.
ELLSWORTH, JAMES W.	RYERSON, MARTIN A.
FIELD, HENRY	SARGENT, HOMER E.
FIELD, MARSHALL	SKIFF, FREDERICK J. V.
FIELD, STANLEY	SMITH, WILLARD A.
GAGE, LYMAN J.	SPRAGUE, A. A., 2ND
GETTY, HENRY H.	STONE, MELVILLE E.
GRAHAM, ERNEST R.	
GUNSAULUS, FRANK W.	
GUNTHER, C. F.	

DECEASED 1916.

HARRIS, NORMAN W.
LATHROP, BRYAN

LIFE MEMBERS.

ADAMS, GEORGE E.
ALDIS, OWEN F.
ALLEN, BENJAMIN

BANKS, ALEXANDER F.
BARRELL, FINLEY
BARRETT, MRS. A. D.
BARRETT, ROBERT L.
BARTLETT, A. C.
BASSFORD, LOWELL C.
BEALE, WILLIAM G.
BILLINGS, FRANK
BLACKSTONE, MRS. TIMOTHY B.
BLAINE, MRS. EMMONS
BLAIR, HENRY A.
BLAIR, WATSON F.
BOOTH, VERNON
BOYNTON, C. T.
BREWSTER, WALTER S.
BROWN, WILLIAM L.
BUFFINGTON, EUGENE J.
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